

## 225mA, 350V SMD Switching Diode

### FEATURES

- Fast switching speed
- Ideal for automated placement
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Switching mode power supply (SMPS)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	225	mA
$V_{RRM}$	350	V
$I_{FSM}$	4	A
$V_F$ at $I_F=200\text{mA}$	1.25	V
$T_J\text{ MAX}$	150	°C
Package	SOT-23	



### MECHANICAL DATA

- Case: SOT-23
- Molding compound meets UL 94 V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Weight:  $8 \pm 0.5$  mg (approximately)

ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Marking code on the device	$\text{MMBD3004}$	HC	
	$\text{MMBD3004CA}$	RA	
	$\text{MMBD3004CC}$	PZ	
	$\text{MMBD3004SE}$	PY	
Power dissipation	$P_D$	350	mW
Repetitive peak reverse voltage	$V_{RRM}$	350	V
Repetitive peak forward current	$I_{FRM}$	625	mA
Forward current	$I_F$	225	mA
Non-Repetitive peak forward surge current	Pulse width=1μs	4	
		1	A
Junction temperature range	$T_J$	-65 to +150	°C
Storage temperature range	$T_{STG}$	-65 to +150	°C

**THERMAL PERFORMANCE**

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	357	°C/W

**ELECTRICAL SPECIFICATIONS** ( $T_A = 25^\circ C$  unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	MAX	UNIT
Forward voltage per diode <sup>(1)</sup>	$I_F = 100\text{mA}, T_J = 25^\circ C$	$V_F$	-	1.00	V
	$I_F = 200\text{mA}, T_J = 25^\circ C$			1.25	
Reverse voltage	$I_R = 100 \mu\text{A}, T_J = 25^\circ C$	$V_R$	350	-	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$V_R = 240 \text{V}, T_J = 25^\circ C$	$I_R$	-	0.1	$\mu\text{A}$
	$V_R = 240 \text{V}, T_J = 150^\circ C$		-	100	
Junction capacitance	$f=1 \text{MHz}, V_R=1\text{V}$	$C_J$	-	5	pF
Reverse recovery time	$I_F=I_R=30\text{mA}, R_L=100\Omega, I_{RR}=0.1I_R$	$t_{rr}$	-	50	ns

**Notes:**

1. Pulse test with PW=0.3 ms
2. Pulse test with PW=30 ms

**ORDERING INFORMATION**

ORDERING CODE (Note 1)	PACKAGE	PACKING
MMBD300x RF	SOT-23	3K / 7" Reel
MMBD300x RFG	SOT-23	3K / 7" Reel

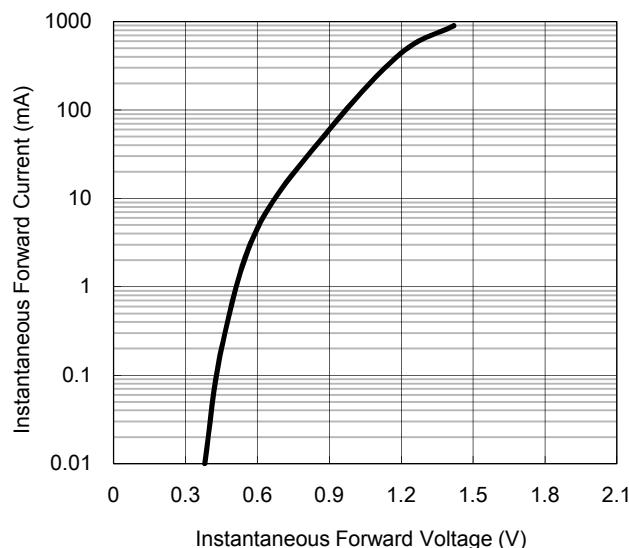
**Note:**

1. "xxx" defines part no. from "4" to "4SE"

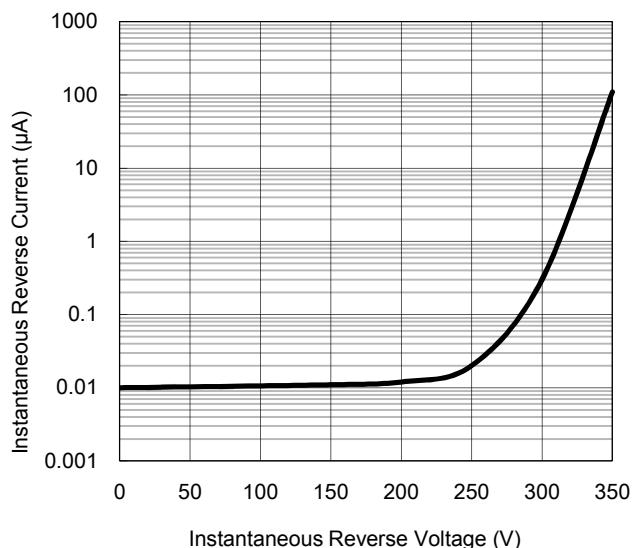
## CHARACTERISTICS CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

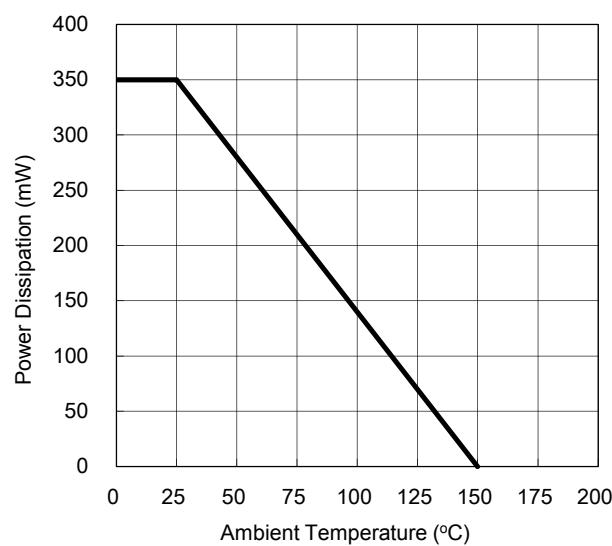
**Fig.1 Typical Forward Characteristics**



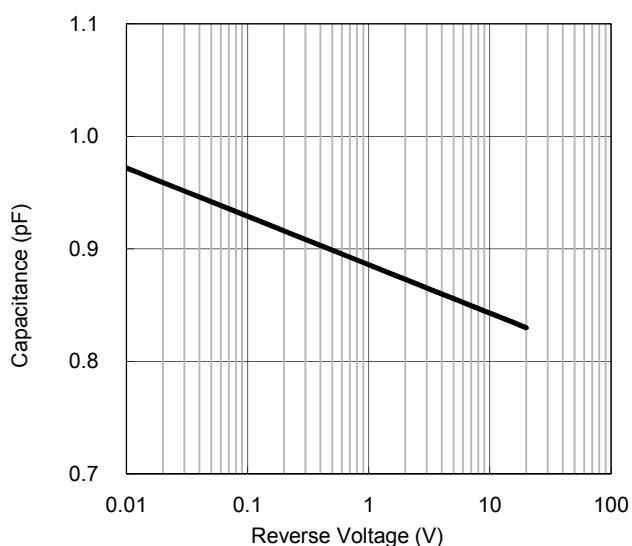
**Fig. 2 Typical Reverse Characteristics**



**Fig.3 Admissible Power Dissipation Curve**

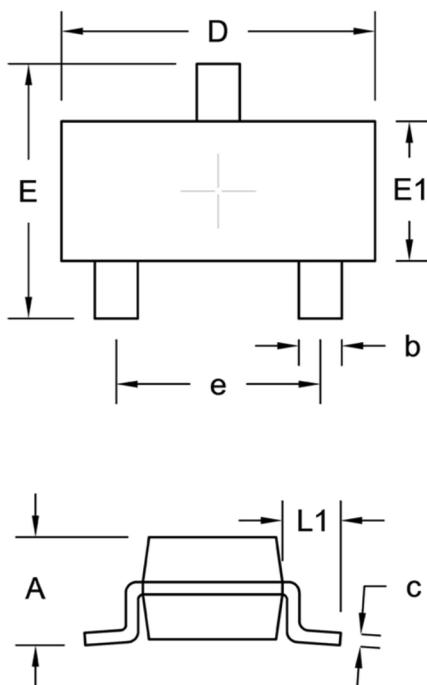


**Fig.4 Typical Capacitance VS. Reverse Voltage**



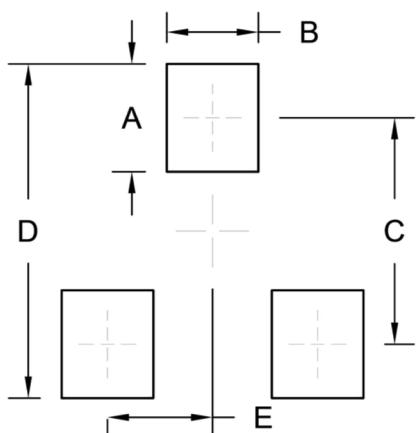
## PACKAGE OUTLINE DIMENSION

SOT-23



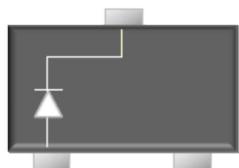
DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.89	1.12	0.035	0.044
b	0.30	0.50	0.012	0.020
c	0.08	0.20	0.003	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E1	1.20	1.40	0.047	0.055
e	1.90 BSC		0.075 BSC	
L1	0.54 REF.		0.021 REF.	

## SUGGESTED PAD LAYOUT

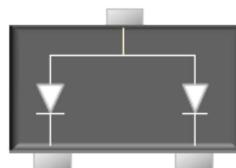


Symbol	Unit (mm)	Unit (inch)
A	1.00	0.039
B	0.85	0.033
C	2.10	0.083
D	3.10	0.122
E	0.98	0.039

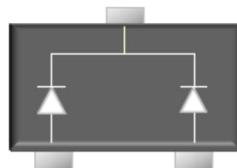
## PIN CONFIGURATION



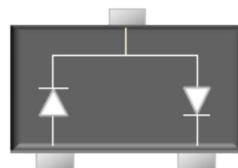
MMBD3004



MMBD3004CA



MMBD3004CC



MMBD3004SE

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